PavePrep Crack Reduction Interlayer
Lowell, Highgate and Hartford, Vermont
Final Report

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Reporting on Work Plan 94-R-19

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16. Abstract

The appearance of cracking in pavement roadways leads to increased maintenance needs and a shorter pavement life. As a result, many products have been developed to help prevent distresses in new asphalt pavement overlays by minimizing the appearance of cracking, in particular reflective cracking. One way to combat the appearance of reflective cracking is through the use of geotextiles that are designed to reinforce the pavement overlay and distribute the stresses in the underlying layers. These geotextile materials are placed on the underlying pavement layer prior to placement of the overlay and help to prevent or delay cracks from propagating through into the new asphalt overlay.

In the summer of 1994, the Vermont Agency of Transportation (VTrans) engaged in an assessment of a type of geotextile designed to prevent reflective cracking, known as the PavePrep Crack Reduction Interlayer. The installation was relatively simple, with few problems. The projects were evaluated annually to observe the location and type of cracking and when it began in both the experimental test sites and adjacent areas. The success of the material varied between test sites. Overall, the PavePrep appeared to work best in areas with lower traffic levels. In high traffic areas reflective cracking appeared after 2-3 years while in low traffic areas cracking didn't occur until over 8 years after installation. In general, the reflective cracking that occurred in the PavePrep test sections was observed to be less severe than other adjacent cracks.

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INTRODUCTION:

With a growing number of pavements in need of reconstruction or rehabilitation and ever increasing construction costs, State Agencies are seeking out cost effective methods of increasing the service life of pavements. One such preventative method is to retard the appearance of cracking in asphalt overlays. Pavement cracking is a serious concern as it decreases the structural strength of the overlay and allows water to penetrate through to sublayers, resulting in reduced ride quality and significant, and often premature, roadway deterioration. The main types of pavement cracking include longitudinal, transverse, and reflective cracking. Longitudinal cracks run parallel to the laydown direction and are usually a type of fatigue or load associated failure. Transverse cracks run perpendicular to the pavement's centerline and are usually a type of critical-temperature failure or thermal fatigue that may be induced by multiple freeze-thaw cycles. Reflective cracks occur when cracks that exist within the base course, subbase or subgrade material propagate through the new wearing course.

The appearance of cracking leads to increased maintenance needs and shorter service life. As a result, many products have been developed to help prevent distresses in new asphalt pavement overlays by minimizing the appearance of cracking, in particular reflective cracking. Reflective cracks are generally caused by vertical movements in underlying pavement layers due to traffic loading and temperature changes. One way to combat the appearance of reflective cracking is through the use of geosynthetic fabrics that are designed to reinforce the pavement overlay and distribute stresses into the underlying layers. These geosynthetic materials are placed on the existing pavement layer prior to placement of the overlay and help to prevent or delay cracks from propagating through into the new asphalt overlay. Many geosynthetic materials are available, ranging from woven fiberglass grids to polypropylene mats. Some of these products also serve as a water-resistant barrier, preventing moisture penetration into lower pavement layers.

In an effort to assess the performance and cost effectiveness of a geosynthetic manufactured to reduce the onset and rate of reflective cracking, the Vermont Agency of Transportation (VTrans) applied PavePrep, a crack reducing interlayer, on three separate roadway rehabilitation projects in the summer of 1994. Pavement studies to characterize the current condition of the various treatments were conducted prior to and following construction on an annual basis. The following report summarizes the findings from annual data collection efforts and subsequent recommendations for the future placement and implementation of PavePrep.

PROJECT DETAILS:

PavePrep Crack Reduction Interlayer was applied in conjunction with three separate projects in 1994 as part of Lowell-Westfield CM F029-2(11)S, Highgate STP 9214(1)S, and also three combined projects in Hartford: CM RS 0113(52), STP-F-020-2(28)S and FG SGNL6(S). The Lowell-Westfield project began at mile marker (MM) 2.864 in Lowell and extended northerly along VT Route 100 for a distance of 8.867 miles to MM 4.700 in Westfield. The Highgate project began in Highgate on US Route 7 at MM 3.031

and extended northerly to MM 6.209 in Highgate for a total distance of 3.178 miles. The Hartford project began in Hartford on US Route 5 at MM 2.715 and extended northerly to MM 4.299 in Hartford for a total distance of 1.584 miles. Project locations are displayed below in Figure 1.

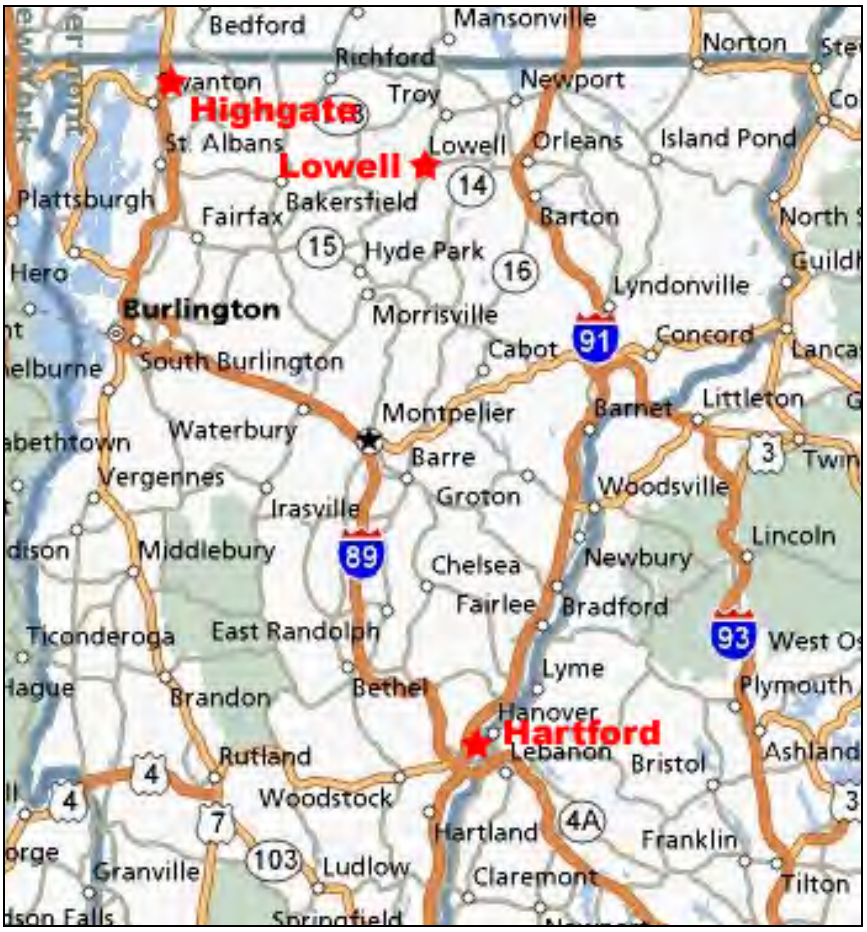

Figure 1 – PavePrep Project Locations

The Lowell/Westfield project included resurfacing of the existing highway with a leveling course and wearing course, new pavement markings, signs, drainage improvements and safety improvements. This project included a 6.821 mile experimental section of asphalt rubber hot mix, or ARHM, and a 2.046 mile control section consisting of a standard Marshall overlay treatment. The experimental section, beginning at MM 4.910 in the town of Lowell and extending to MM 4.700 in the town of Westfield, consisted of a 1" leveling course followed by 1.5" of ARHM as the wearing course. It is important to note that the amount of recycled rubber incorporated into the asphalt cement binder was well below the 15% required by ASTM Standard D 8-02, "Standard Terminology Relating to Materials for Roads and Pavements," potentially resulting in a stiffer pavement which would be more susceptible to reflective cracking.

The control section, beginning at MM 2.864 and extending to MM 4.910 in the town of Lowell for a total of 2.046 miles, consisted of a 1" leveling course followed by 1.5" of a

standard 50 Blow Type III Marshall mix. The binder utilized within the mix was an AC 20, provided by Petro Canada, also of Montreal. Emulsified asphalt was applied to the existing surface and to the surface of the leveling course in both the experimental and control sections. The project also included the installation of two 20" wide by 22' long sections of PavePrep installed over transverse shoulder to shoulder cracks. One of the PavePrep sections was installed at MM 6.13 in the town of Lowell on a flat section of roadway in the experimental ARHM section and the other was installed in the control section at MM 3.26 in the town of Lowell on a flat section of roadway. The PavePrep was installed between the leveling and wearing course. The reported AADT for 2006 for MM 3.26 on VT Route 100 in Lowell was 2400, which is an increase from the 1994 AADT of 1810 and is considered a relatively low AADT for Vermont. The reported AADT for 2006 for MM 6.13 on VT Route 100 in Lowell was 1500, which is an increase from the 1994 AADT of 1400 and is considered a relatively low AADT for Vermont.

The Highgate project included resurfacing of the existing highway with a leveling course, wearing course, new pavement markings, guardrail, signs and other incidental items. The existing roadway, which consisted of a Portland cement concrete base, received a Type III or IV bituminous concrete leveling course and 1.5" of a Type III medium duty bituminous concrete wearing course. Emulsified asphalt was applied to the existing surface and to the surface of the leveling course. The project also included the installation of a 20" wide by 24' long section of PavePrep installed over a transverse shoulder to shoulder crack at MM 3.6 and the installation of a 20" wide section of PavePrep over a longitudinal crack on the centerline at MM 3.6. PavePrep was installed between the leveling and wearing course. The reported AADT for 2006 for this section of US Route 7 in Highgate is 440, which is a decrease from the 1994 AADT of 590 and is a very low AADT for Vermont.

The Hartford project included the cold planing and resurfacing of the existing highway with a wearing course, new pavement markings, guardrail, signs and other incidental items. The existing roadway was cold planed to a depth of 2.5". A wearing course of Type III bituminous concrete was applied in two 1.25" lifts for a total thickness of 2.5". Emulsified asphalt was applied to the cold planed surface and between lifts. The project also included the installation of a 20" wide by 24' long section of PavePrep installed over a transverse shoulder to shoulder crack at MM 3.13. Emulsified asphalt was applied to the milled surface just prior to the PavePrep installation. The wearing course was then applied over the PavePrep. The reported AADT for 2006 for this section of US Route 5 in Hartford is 10,800, which is a decrease from the 1994 AADT of 13,085 and is a moderate AADT for Vermont. A summary of the project details can be found below in Table 1.

PavePrep Project Location and Treatment Summary						
Project	**Location**	**Project Treatment**	**PavePrep Location**	**1994 AADT**	**2006 AADT**	**Asphalt Emulsion Used**
Lowell-Westfield	VT-100 MM 4.910 Lowell – MM 4.700 Westfield	1” leveling course, 1.5” ARHM wearing course	MM 6.13 Lowell	1,400	1,500	Yes
Lowell-Westfield	VT-100 MM 2.864 Lowell – MM 4.910 Lowell	1” leveling course, 1.5” 50 Blow Type III Marshall wearing course	MM 3.26 Lowell	1,810	2,400	Yes
Highgate	US-7 MM 3.031 Highgate – MM 6.209 Highgate	Bituminous concrete leveling course, 1.5” Type III Marshall wearing course	MM 3.6 Highgate	590	440	Yes
Hartford	US-5 MM 2.715 Hartford – MM 4.299 Hartford	2.5” Cold plane, 2.5” Type III bituminous concrete	MM 3.13	13,085	10,800	Yes

Table 1 – Project Details

HISTORICAL INFORMATION:

As with any surface treatment, the overall success of a pavement is often dictated by the underlying structure. Insufficient lateral support may cause fatigue cracking or rutting. An impervious media coupled with surface cracks allows for further water infiltration resulting in thermal cracking in a freeze/thaw environment. Figures 2 through 5, provided below, contain the profiles of the original construction dating to the 1920s and 1930s. UNK indicates an unknown thickness.

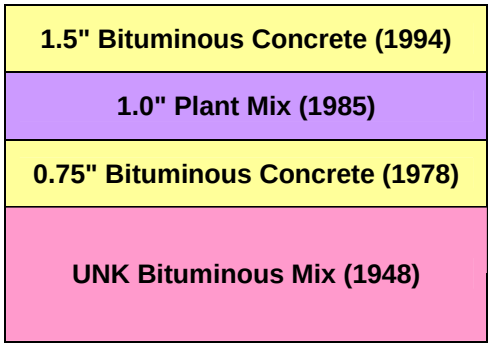

Figure 2 – MM 3.26 in Lowell

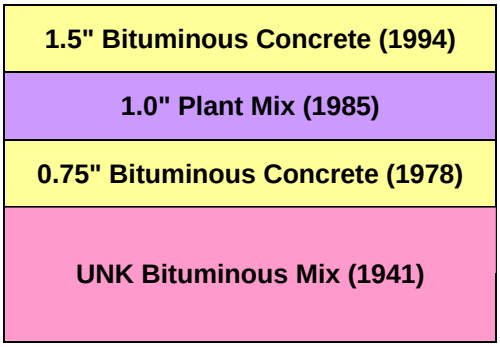

Figure 3 – MM 6.13 in Lowell

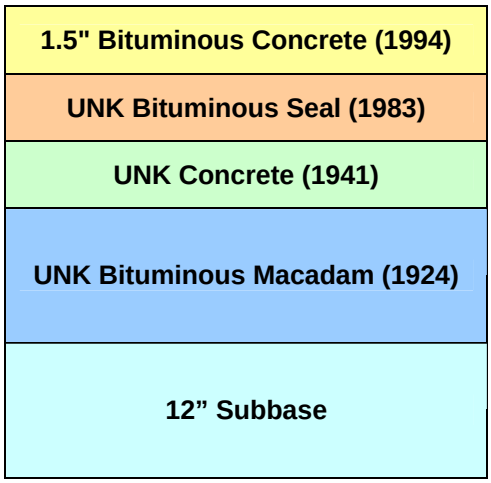

Figure 4 – MM 3.60 in Highgate

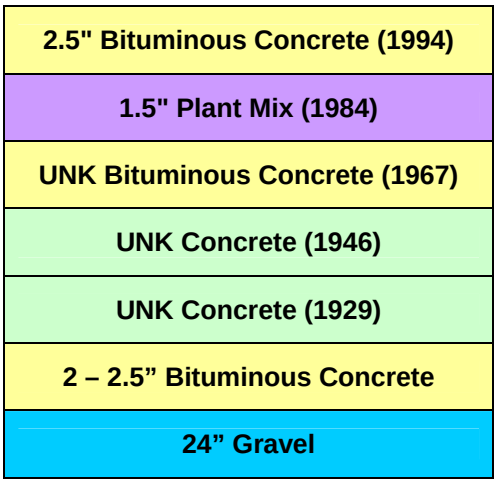

Figure 5 – MM 3.13 in Hartford

According to the Natural Resources Conservation Service (NRSC), the primary soil types in Lowell are Colton – Duxbury complex typically consisting of gravelly coarse sand and fine sandy loam at MM 3.26, and Adams loamy fine sand at MM 6.13. The Colton – Duxbury series is excessively drained and the Adams series is somewhat excessively drained. The primary soil type in Highgate is a Binghamville silt loam. The Binghamville series is poorly drained. The primary soil type in Hartford is an Urban land – Windsor-Agawam complex loamy fine sand. The Windsor-Agawam series is excessively drained.

PRODUCT DETAILS:

According to the manufacturer, Crafco, Inc. from Chandler, AZ (formerly CONTECH Construction Products), the PavePrep Crack Reduction Interlayer is "a high density mastic laminated with a tough woven polyester designed specifically to withstand the loads encountered by highway traffic and stress concentrations at pavement joints and cracks." PavePrep's flexible material prevents cracks from reflecting through the pavement overlay by distributing pavement stresses. The product can be applied over both Portland cement concrete and asphalt concrete surfaces.

There are two types of PavePrep Crack Reduction Interlayers, PavePrep and PavePrep SA. PavePrep requires the use of an asphalt tack coat to adhere the material to the existing roadway surface. PavePrep SA is self-adhesive, which eliminates the need for a tack coat. Both have identical material compositions, with the exception of the adhesive, with a peak minimum tensile strength of 2000 psi and peak minimum elongation of 10%.

The placement of this material requires the road surface to be smooth, clean and dry with previously sealed pavement cracks. Cracks between ¼" and 2" wide should be cleaned and filled with crack seal. Wider cracks and holes should be cleaned and patched to provide a level surface. A tack coat is required for PavePrep but is not required for PavePrep SA. On milled surfaces, a prime coat of emulsified asphalt is required prior to the PavePrep installation for both PavePrep and PavePrep SA. The material can be laid

out by hand or using mechanical means as long as there is sufficient tension to eliminate ripples. It is recommended that joints be butted and sealed with approved mastic. For asphalt overlays, a paving tack of emulsified asphalt must be used over the PavePrep or PavePrep SA prior to paving. The material then needs to be pressure rolled with at least three passes of a pneumatic roller to establish a tight and continuous bond with the existing surface. A wearing course with a minimum compacted thickness of 1.5 inches should then be applied over the PavePrep, although the product can be left open to traffic for up to 7 days after installation and prior to paving.

INSTALLATION:

In the summer of 1994, PavePrep Crack Reduction Interlayer was installed in four locations in conjunction with three separate projects. The first installation occurred on June 15, 1994 on the Lowell-Westfield project. A 20" wide by 22' long section of PavePrep SA was applied to a transverse shoulder to shoulder crack in two locations, at MM 3.26 and MM 6.13 in the town of Lowell on VT Route 100. The installation is shown in Figures 6 and 7 below. The roadway was paved on June 21, 1994, 6 days following application, with a 1.5" wearing course of standard Type III Marshall overlay at MM 3.26 and a 1.5" ARHM overlay at MM 6.13. Emulsified asphalt was applied prior to placement of the overlay.

Figure 6 – Lowell MM 6.13 Installation

Figure 7 – Lowell MM 6.13 Overlay 1994

The second installation occurred on July 15, 1994 on the Highgate project. A 20" wide by 24' long section of PavePrep SA was applied to a transverse shoulder to shoulder crack at MM 3.6 and a 20" wide section of PavePrep SA was applied to a longitudinal centerline crack at MM 3.6. The roadway was paved on July 18, 1994, three days following application, with a 1.5" thick wearing course consisting of a standard Type III bituminous concrete overlay. Emulsified asphalt was applied prior to placement of the overlay.

The final PavePrep installation began on September 28, 1994 on the Hartford project. A 20" wide by 24' long section of PavePrep SA was applied to a transverse shoulder to shoulder crack at the intersection of US Route 5 and Sykes Avenue on a milled surface. The following day, the material was found to have detached itself from the road surface, most likely caused by the rough textured pavement surface and further aggravated by rain

showers following installation. On October 4, 1994 a new 20" wide by 24' long strip of PavePrep SA was placed at MM 3.13 on US Route 5, as shown in Figure 8. Emulsified asphalt was applied to the milled surface prior to the PavePrep SA installation, as recommended by the manufacturer. The first lane was then paved within ten minutes following installation. During paving operations, the PavePrep fabric was picked up by the shoes on the paver's automatic grading and slope equipment. This problem was corrected by lifting up each pad as it passed over the PavePrep material, as shown in Figure 9. The roadway was paved with a 2.5" wearing course consisting of two 1.25" lifts of a standard Type III bituminous concrete overlay as shown in Figure 10.

Figure 8 – Hartford PavePrep Installation


Figure 9 – Hartford Paving Problem


Figure 10 – Hartford Paving Overlay

OBSERVATIONS:

Pavement surveys to characterize the conditions of the roadways and record locations of cracking were conducted prior to installing and following installation of the PavePrep material. Site visits were conducted annually beginning in the summer of 1995 and continuing through August 2002, and a final site visit was conducted in July 2007. The

inspections consisted of observing and recording the location and type of cracking, both in the PavePrep test section and adjacent area.

LOWELL-WESTFIELD:

At the initial site visit in 1995, one year following application, there were no signs of reflective cracking in either of the PavePrep test locations or the control sections. In general the pavement appeared to be performing well in the test section and adjacent areas. In the summer of 1996, three small reflective cracks totaling 10 feet developed at the test location at MM 3.26, with seven feet located in the northbound lane and three feet in the southbound lane. It was later determined that portions of the crack were located outside of the PavePrep area, as the crack diverges away from the interlayer towards a southerly direction beginning nine feet from the shoulder extending towards the centerline. Several reflective cracks were also found in the control section, with a maximum length of 11 feet. The test section at MM 6.13, within the experimental AHRM section, was still found to be free of cracking. In 1997, the previously noted reflective crack at MM 3.26 had increased in length from 10 feet to 14 feet, with 10 feet in the northbound lane and four feet in the southbound lane. Figures 11-14 show the test sites prior to the PavePrep installation in 1994, and again four years after installation in 1998.

Figure 11 – Lowell MM 3.26 Preconstruction

Figure 12 – Lowell MM 3.26 in 1998

Figure 13 – Lowell MM 6.13 Preconstruction

Figure 14 – Lowell MM 6.13 in 1998

The locations were again inspected in June 1998. Notes from the site visit indicate that no further cracking had developed at MM 3.26 and no reflective cracking was observed at MM 6.13. However, upon comparison of photos from preconstruction in 1995 and the 1998 site visit, it appears that the transverse crack had reflected at MM 6.13. A transverse crack that was noted as being three feet south of the PavePrep material was determined to actually be at the location of the PavePrep. This was verified by comparing the shape and characteristics of the reflected crack with the preconstruction crack. Upon further investigation, pavement life surveys for the test site indicated that the reflected crack was originally observed in 1996 along with several other transverse cracks in the area. In 1996 the crack extended within two feet of the entire roadway width and in 2005 the crack reflected the final two feet across the roadway. In the 1998 photographs, the reflected crack appeared to be much less severe than the preconstruction crack. This indicates that although the PavePrep had not prevented the crack from reflecting, it had minimized the severity of the crack.

In July 1999 it was found that the reflective crack at MM 3.26 had extended across the entire width of the northbound lane, to a length of 12 feet in the northbound lane and 4 feet in the southbound lane. This crack had increased to a length of 18 feet in October 2000, although still only nine feet of the crack length was located within the PavePrep test area. Also in 2000, hairline cracking was noticed at the test section at MM 6.13. These cracks were longitudinal in nature and not transverse or reflective, which indicates that they were caused either by fatigue or environmental factors. In July 2001, the hairline longitudinal cracks at MM 6.13 had expanded in width to nearly 1" in certain locations. The cracking at MM 3.26 remained unchanged from the previous inspection. At a final site visit in July 2007, the crack at MM 3.26, shown below in Figure 15, had extended across the entire roadway and was interconnected with other longitudinal cracks in the pavement, which had led to alligator cracking in one area. At MM 6.13, shown in Figure 16 below, the transverse reflective crack spanned the entire roadway and had a width of up to 2 cm. This crack was interconnected with several longitudinal cracks, but did not display the severity of alligator cracking.

Figure 15 – Lowell MM 3.26 in 2007

Figure 16 – Lowell MM 6.13 in 2007

HIGHGATE:

At the initial site visit in 1995, one year following application, there were no signs of reflective cracking in either the PavePrep test location or the control section. In general the pavement appeared to be performing well in the test section and adjacent areas. Figure 17 shows the condition of the pavement during the 1998 site visit. No cracking had developed in either the experimental or control sections until June 2000, when full length transverse cracking was observed both 15.5 feet and 36.5 feet south of the PavePrep material. Longitudinal cracking was noted 10" off the center of the white edge line in the northbound lane and 16" off the center of the white edge line in the southbound lane in both the experimental and control areas, as shown in Figure 18 below. These cracks were typical of the roadway in the immediate area and most likely are located at the paving joints. Signs of longitudinal cracking at the centerline were observed beginning slightly south of the PavePrep location and continuing southerly. No reflective cracking was observed in the experimental PavePrep area.

Figure 17 – Highgate in 1998

In July 2001, the longitudinal cracking had become more evident throughout the site. During this site visit a centerline longitudinal crack extending though the PavePrep test location with an average width of 0.5 cm was recorded. However field notes and photographs from the August 2002 site visit indicated that this is not the case. The paving joint was visible but there were no signs of reflective cracking in the PavePrep area, though there were some reflective centerline cracks in the control area. No reflective transverse cracking was noticed at the PavePrep location, but full length transverse cracks were observed at 40 foot intervals throughout the control section. These cracks are most likely caused by the joints of the underlying Portland cement concrete reflecting through the overlay, but could also be caused by construction practices during the installation of the new overlay, with each crack representing a new truck load of asphalt during application. At a final site visit in July 2007, shown in Figure 19 below, cracking had begun to develop on both the transverse and centerline PavePrep locations. The transverse crack spanned the entire roadway, but was only 5 mm wide. The centerline longitudinal crack was also only 5 mm wide and did not extend

through the entire length of the test site. Longitudinal cracking had developed next to the centerline paving joint.

Figure 18 – Highgate in 2000

Figure 19 – Highgate in 2007

HARTFORD:

At the initial site visit in 1995, one year following application, there were no signs of reflective cracking in either the PavePrep test location or control section. In general the pavement appeared to be performing well in the test section and adjacent areas. No cracking was observed through 1997, and no site visit was conducted in 1998. In July 1999, two transverse reflective cracks were observed at the test site along the PavePrep location. One crack measured nine feet in length, spanning from the shoulder edge towards the centerline, while the other crack measured 23 feet in length and spanned from the island median towards the centerline. The cracks overlap slightly at the centerline, and combined they span the entire roadway width. The crack had been filled with crack sealer prior to the 1999 site visit. No additional cracking was observed until July 2001 when polygon cracks began to develop off both sides of the sealed cracks. This trend was also observed during an August 2002 site visit, and a centerline longitudinal crack had also developed and been filled with crack sealer. At the final site visit in July 2007, additional cracking had developed off of the original transverse cracks, as well as additional longitudinal cracking along the centerline and shoulder edge of the roadway. However, it is important to consider problems associated with construction as described previously making it difficult to draw any conclusions regarding performance at this particular test site. Figures 20-22 below show the condition of the PavePrep area prior to construction in 1994 and post construction in 2000 and 2007.

Figure 20 – Hartford in 1994

Figure 21 – Hartford in 2000

Figure 22 – Hartford in 2007

LITERATURE SEARCH:

A literature search was conducted upon completion of this project, with a focus on similar projects in other states. The Maine Department of Transportation performed a study from 1995 to 2000 comparing the performance of PavePrepSA to another geosynthetic material and a standard treatment. After only six months, 80% of the high severity cracks had reflected into the overlay in all sections. It appeared that PavePrep was the least effective treatment type used. Overall, the study determined that the use of reinforcement materials had a minimal impact on the prevention of reflective cracking.

The Oregon Department of Transportation (ODOT) conducted a study from September 1998 to May 2007 evaluating the performance of five different geosynthetic materials designed to prevent reflective cracking, one of which was PavePrep SA. ODOT reported that PavePrep SA was one of the easiest materials to install and one of the least expensive in terms of labor, although it was most expensive in terms of material costs by more than

$4 per meter and second most expensive overall. At the end of the study in 2007, all of the cracks had reflected in all of the experimental sections. The PavePrep SA was found to have "performed well in the early years of the study" but by 2006 five reflective cracks were observed to be high severity. Overall, it was found that the "crack fill only sections outperformed the geosynthetic material." The geosynthetic materials were found to have been ineffective, as the roadway in the study required resurfacing after nine years due to fatigue cracks, rutting and longitudinal cracking.

COST:

In 1994, the cost for 20 inch wide PavePrep was between $1.00 and $1.20 per linear foot. In 2008, a representative of the manufacturer provided estimated costs for PavePrep Crack Reduction Interlayer. The cost for PavePrep is estimated to be $0.99/sq. ft. and the cost for PavePrep SA is estimated to be $1.09/sq. ft. for the material only. This means that the cost for 20 inch wide PavePrep is now around $1.65 per linear foot and around $1.82 per linear foot for PavePrep SA for the material only.

SUMMARY:

In an effort to assess the performance and cost effectiveness of a geosynthetic material intended to reduce the onset and rate of reflective cracking, the Vermont Agency of Transportation (VTrans) applied PavePrep, a crack reducing interlayer, on three separate roadway rehabilitation projects in the summer of 1994; , Lowell-Westfield CM F029-2(11)S, Hartford (three projects) CM RS 0113(52), STP-F-020-2(28)S and FG SGNL6(S), and Highgate STP 9214(1)S. PavePrep Crack Reduction Interlayer is a material composed of high density asphalt mastic between two layers of woven polyester fabric that is designed to prevent or delay the appearance of reflective cracking when it is installed on an existing roadway prior to placing an overlay. PavePrep's flexible material reportedly prevents cracks from reflecting through the pavement overlay by distributing the pavement stresses that cause pavement distresses.

The installation of the PavePrep was completed with minimal difficulty and in accordance with the manufacturer's specifications. A problem was encountered during installation on the Hartford project. The materials were installed and left open to traffic overnight. The next day the PavePrep had become detached from the pavement surface, most likely due to the roughness of the pavement and overnight rain showers. Another strip of PavePrep was installed and immediately paved. During the paving process, the PavePrep fabric was picked up by the shoes on the paver's automatic grading and slope equipment. This problem was corrected by lifting up each pad as it passed over the PavePrep material. No other difficulties were encountered during any of the other PavePrep installations.

Site visits were conducted on an annual basis. Inspections consisted of observing and recording the location and type of cracking both in the PavePrep test section and adjacent area. Overall, the PavePrep appeared to have varied levels of effectiveness on these projects. Cracking began to appear in 1996, two years following installation, in the

PavePrep test areas and the adjacent areas for both test sites in Lowell. The PavePrep initially appeared to minimize the severity of the cracks, as the transverse reflective crack at MM 3.26 appeared to deflect off of its preconstruction path. In 2007, alligator cracking was noted on the crack at MM 3.26 and MM 6.13 with widths of up to 2 cm with interconnected longitudinal cracks. In Highgate, the PavePrep successfully prevented reflective cracking for over eight years while transverse cracking in the surrounding areas was observed after eight years at 40 ft intervals. In 2007, low severity reflective cracking in the PavePrep area was observed. At the Hartford test site, the crack had completely reflected and was crack sealed sometime between 1997 and 1999, three to five years following the PavePrep installation. The reflective cracks appeared to have started at each side of the pavement, and the two individual cracks passed at the middle but did not cross through each other. In 2007, cracking had continued to develop off the sides of the reflected cracks. The Hartford location had the highest AADT of the test sites.

PavePrep appeared to be most successful in locations with lower traffic levels, as it successfully prevented reflective cracking for over eight years in Highgate. At the other test sites, the PavePrep only prevented reflective cracks from forming for up to three years following installation. This is similar to results observed by other states, which found that the use of PavePrep had a minimal impact on the occurrence of reflective cracking. Overall, the PavePrep appeared to reduce the severity of the reflective cracking that appeared at the test sites.

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